

Claims

[c1]

What is claimed is:

1. A method for track locking in an optical disc drive, the optical disc drive comprising an pick-up device for reading data from a plurality of tracks of an optical disc, the optical disc comprising a plurality of adjacent track periods, each track period comprising an on-track period and an off-track period, the on-track period comprising only one track, the optical disc drive further comprising a driving device for driving the pick-up device, and a location detecting device for detecting a location of the pick-up device and producing a tracking error signal, the method comprising:

producing a corrected tracking error signal, according to the tracking error signal, when the pick-up device is located at a target track related to the off-track period, the corrected tracking error signal being a mirror signal of the tracking error signal; and

controlling the driving device to enable the pick-up device to lock at the target track, according to the corrected tracking error signal;

2. The track locking method of claim 1, wherein a reference value of the tracking error signal is obtained when the pick-up device is located at a common border between the on-track period and the off-track period, and the mirror signal is obtained by taking the reference signal as a reference to convert the tracking error signal.

[c2]

3. The track locking method of claim 1, wherein in the step of producing the corrected tracking error signal, when the pick-up device is located at the off-track period related to the target track, the corrected tracking error signal is approximately proportional to a distance between the pick-up device and the target track.

[c3]

4. The track locking method of claim 3, wherein the step of producing the corrected tracking error signal further comprises:
when the access device is located at the on-track period of the target track, using the tracking error signal as the corrected tracking error signal.

[c4]

5. The track locking method of claim 1 further comprising:

differentiating a location of the pick-up device, according to a track cross signal.

[c5] 6. The track locking method of claim 5, wherein the track cross signal is a Radio Frequency Zero Cross (RFZC) signal.

[c6] 7. An optical disk drive with a pick-up device for reading data from a plurality of tracks of a compact disc, the compact disc comprising a plurality of adjacent track periods, each track period comprising an on-track period and an off-track period, the on-track period having only one track, the optical disc drive comprising:

a driving device for driving the pick-up device;

a location detecting device electrically connected to the pick-up device for detecting a location of the pick-up device and producing a tracking error signal when the pick-up device is located at a common border between the on-track period and the off-track period, the tracking error signal having a reference value;

a signal correcting unit electrically connected to the location detecting device for producing a corrected tracking error signal according to the tracking error signal; and

a control device electrically connected to the signal correcting unit for controlling the driving device according to the corrected tracking error signal; wherein when the pick-up device is located within the off-track period related to a target track, the corrected tracking error signal is a mirror signal of the tracking error signal.

[c7] 8. The optical disc drive of claim 7, wherein when the pick-up device is located within the off-track period related to the target track, the corrected tracking error signal is approximately proportional to a distance between the pick-up device and the target track.

[c8] 9. The optical disc drive of claim 7, wherein when the pick-up device is located at the on-track period related to the target track, the corrected tracking error signal is the same as the tracking error signal.

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- [c9] 10. The optical disc drive of claim 7, wherein the signal correcting unit differentiates the location of the pick-up device according to a track cross signal.
- [c10] 11. The optical disc drive of claim 10, wherein the track cross signal is a Radio Frequency Zero Cross (RFZC) signal.

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